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ABSTRACT

This booklet is intended to inform school district officials, school planners, and manufacturers of the Bureau's criteria for adequate housing. Part 1 discusses the portable classroom impact, presents data about portable classrooms, and states the Bureau's policy regarding portables. Part 2, performance specifications, is presented to clarify the State's recommendations for manufacturers. Part 3 contains an evaluation questionnaire keyed closely to the performance specifications for manufacturers and potential clients to use in rating a transportable building against the minimum design standards and in identifying design deficiencies. Part 4, problems of compliance with Title 21, consists of a series of questions dealing with manufacturers' compliance with State codes answered by the State attorney general. Part 5 contains the procedures for acquiring portable buildings. (Author)

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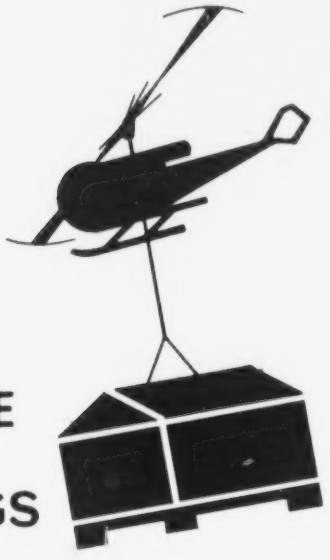

PORTABLE SCHOOL BUILDINGS

BUREAU OF SCHOOL PLANNING

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CONTENTS

INTRODUCTION ____ 1

PART I PORTABLE CLASSROOM IMPACT ____ 3

The Extensive Use of Portables ____ 5
Why Districts Buy Portables ____ 6
Why the Layman is Misinformed ____ 7
The Portable Classroom Restricts Education ____ 7
Bureau Policy Regarding Portables ____ 8
Conclusion ____ 9

PART II PERFORMANCE SPECIFICATIONS ____ 11-15

PART III EVALUATION QUESTIONNAIRE ____ 17-21

PART IV PROBLEMS OF COMPLIANCE WITH TITLE 21 ____ 23-27

PART V PROCEDURE FOR ACQUIRING PORTABLE BUILDINGS ____ 29-33

INTRODUCTION

For many years large school districts, particularly large city districts, were the only users of portable classrooms. These districts designed and constructed their own. Most were awkward and costly to move, and, after thirty odd years, hundreds still stand on the exact spot on which they were built.

As suburbia began to blossom after World War II, scores of small rural school districts became large city districts. Enrollments exceeded classroom facilities, and many school officials purchased portable classrooms as an emergency solution to their housing problems.

Segments of the building industry representing both responsible firms and speculative interests began heavy sales promotion. Portable classrooms became an over-the-counter commodity in a highly competitive market. Established legal procedures for planning and providing school buildings were often ignored by both the seller and the buyer, including the specific requirements of Title 21 (structural safety requirements). A few designs, most of them similar in basic concept, became the "stock plans" of the portable classroom industry. Continued fierce competition has tended to prevent major design changes or improvement in these facilities.

The Bureau of School Planning has the responsibility to inform school district officials, school planners, and manufacturers about the problems encountered when districts purchase inadequate housing and to make known the Bureau's criteria for adequate housing. The following information is directed to this purpose.

Part I — PORTABLE CLASSROOM IMPACT

The development of the portable classroom has been disappointing when measured by any yardstick of design standards. Most districts candidly admit that their portable buildings do not approach the quality or functional level one might reasonably expect from today's technology, nor do they possess the aesthetic qualities anticipated. Costs are generally higher than the district can justify when it is apparent that this same money can purchase a custom-designed school with similar space, furnishings, and equipment. Obviously, the best design skills and know-how of architects, engineers, and fabricators have not been focused on the portable classroom. Most units marketed today are expensive, poorly detailed, and restrictive in space geometry. A poor design and a high price do not prevent a product from being successfully marketed. California school districts have invested heavily in portable classrooms that will become an increasing embarassment to the administrators. For years to come they will continue to pay for buildings that are educationally obsolete.

The failures of the past do not mean that the manufactured portable cannot achieve an honorable future. It is theoretically possible to produce a superior product with mass production techniques under quality control methods, and certainly a manufacturer can afford to buy more design and engineering time for a building produced in quantity than a district can afford to pay for a single custom building.

PORTABLE CLASSROOM IMPACT

THE EXTENSIVE USE OF PORTABLES

A research study published in 1960 by Stanford University revealed that 19% of the total classrooms in Los Angeles are of the portable type; in San Diego - 18%; in Sacramento - 13.4%; and in San Francisco - 13.7%. The average percent of use in districts with over 10,000 average daily attendance was 16.8%. Throughout California, portables comprise more than 10% of all classroom housing. These figures were confirmed in 1962 by a federal survey which also disclosed that California schools were using more than three times as many portable classrooms as any other state percentagewise. Texas was second with approximately 3% of its classrooms of the portable type. This is significant because it dramatically revealed that California has invested heavily in a type of classroom unit that, in concept, is generally admitted to be substandard.

These surveys are now out-of-date. Since 1960, we have seen an increased use of the portable because of new state and federal education programs. In 1965, for example, the Congress of the United States passed the Elementary Secondary Education Act as part of the Great Society's Program initiated by President Johnson. Stipulated in the rules and regulations of this largest Federal Aid to Education effort was a rule limiting the expenditure of ESEA funds for permanent construction. Thus, hundreds of portable classrooms were purchased or leased to meet the requirements of this program. Other programs which contributed to the unprecedented demand for portables were the Economic Opportunity Act, which provides improved educational opportunity for the culturally deprived child. (Operation Head Start is one example.) Again school districts met the demand for educational space to house developing programs through relocatable facilities. Senate Bill 28 was passed in the summer of 1966 by the California State Legislature. It provides $34 million to reduce class size and $1 million for housing migratory school children. The $1 million was specifically allocated for the purchase of relocatable classrooms.

In addition to the units acquired specifically for state and federal programs, many districts have experienced difficulty in passing bond issues and, therefore, have leased quantities of portables. Statistics are not presently available, but it is a certainty that many districts have more than doubled their number of portable classroom units since 1960.

WHY DISTRICTS BUY PORTABLES

Portable classrooms are generally purchased for the following reasons:

1. Shifting enrollments — a mobile population;
2. Time factor — a district needs immediate housing;
3. Economy — it is believed that portables are cheap.

Each of these reasons needs examination before it can be accepted as valid.

Shifting Enrollments The use of portable classrooms is justified in those situations where the student enrollment is not stable. It is true that a mobile population may validate the use of mobile facilities, but it is equally true that a stable community deserves the advantages of custom-designed permanent facilities. It is extremely unlikely that any major California school district has a student population shift during the life-span of a portable that would justify the use of these units as a substitute for permanent facilities to the extent of about 10% of the total number of classrooms.

Time Factor A portable or relocatable building does provide a rapid solution to classroom construction. A building can be ordered and delivered to the site within a few weeks. All too frequently, however, they are needed in a hurry only because of poor district planning.

Economy The fundamental reason for purchasing or leasing portable school facilities is the belief that portables are a cheap solution when the district is in a financial squeeze. The State of California, as one major purchaser of portables, can give evidence as to whether or not this is true. The Office of Local Assistance, under the Department of General Services, has actual cost figures for portable classrooms purchased by districts under the state-aid program and portable units purchased by the state under Senate Bill 28 — Migrant Housing. (It is the understanding of the Department of Education that the initial cost of these portable classrooms is very close to the maximum cost allowances for permanent classrooms under the state-aid program.) Most portable classrooms sell for about $13,000 for a facility of about 960 square feet. The average cost of moving this so-called portable classroom exceeds $2,000 per move. Acknowledgment must also be made of the fact that these units are of temporary quality and, thus, one can assume that their useable life-span is no more than half that of a typical custom-designed permanent facility. One must add to the purchase price of portables the higher maintenance costs and higher overhead and operating costs. Available evidence suggests that portables are actually more expensive to own and operate than the permanent type facility.

WHY THE LAYMAN IS MISINFORMED

Since 1960 a large number of manufacturers have entered the portable classroom field. They have broadened their operations and means of production to meet the demands for educational space generated by federal and state funds. Salesmen periodically contact school superintendents, business managers, and trustees who might be potential customers. Colorful and abundant sales literature proclaims that these units are "reasonably priced", "flexible", "built to permanent standards", "suitable for modern education", etc. This promotion is effective because few counteracting voices are heard and because the average taxpayer sincerely believes that the portable classroom represents economy and a suitable educational environment.

THE PORTABLE CLASSROOM RESTRICTS EDUCATION

New schools being planned today are basically large loft space shells in which the interiors can be readily modified to accommodate varied teaching-learning activities. The portable classroom, however, retains the space geometry of yesterday's self-contained classroom.

Educational Facilities Laboratories, Inc. says it another way in a report titled Relocatable School Facilities published in 1964:

"At the most primitive levels of planning, the school is simply a shelter; a shed or large box to protect the student, his books, his papers, and his teacher from rain, snow, and the glare of the sun. Simple arithmetic would have it that the bigger the enrollment, the more boxes we need.

Obviously, school planning as a process has advanced beyond the simple arithmetic means to an end.

Following more advanced concepts of planning, today's school is a complex of spaces and facilities of varied sizes. . . . Space for the student to work by himself. Space to meet with a teacher and/or small group in a seminar. Space to receive instruction in a larger group. Space to meet in large assemblies. Space for the principal, the counsellor, the nurse. . . . the cafeteria, the gymnasium, the heating plant.

While the classroom is still the most recognizable unit of school space, it is clearer today than ever before that the isolated classroom, a 30' x 30' cell for 30 students and one teacher, is not sufficient for the total education of the students who occupy it. Planning for an effective interrelationship of spaces and equipment has superseded older concepts of joining a series of cells by a corridor and calling it a school.

By the very nature of the structure. . . . the relocatable facility. . . . is usually an isolated classroom unit, physically separated from the main school plant to which it has been assigned.

This isolation from the mainstream of a school's functional plan — the limited access to the educational experiences designed into a well-planned school complex — is undoubtedly the major educational disadvantage of relocatable facilities now in use. And thus we may slip back to the cliché of a school being a series of isolated cells, this time not even joined by a corridor."

BUREAU POLICY REGARDING PORTABLES

The Bureau of School Planning, State Department of Education, does not support the use of portable classrooms as a substitute for custom-designed facilities except in those instances where a district can submit clear evidence that they represent a logical answer to the district's housing problem. This policy is based upon the following facts:

1) Portable classrooms are not suitable for instructional programs which require large free-flowing spaces equivalent to several traditional classrooms. No portable manufacturer is presently marketing units which provide the type of space geometry and environmental controls recommended by the Bureau of School Planning. (This statement is made with the knowledge that manufacturers can make extensive modifications to the trailer-type component to comply with a client's specifications.)

2) Manufactured portable units are not suitable for toilets, multi-purpose or gymnasium spaces, music rooms, science, arts and crafts, shop facilities, libraries and cafeterias, and large group instructional spaces. Efforts by school districts to adapt portable space to these functions have had questionable results.

3) Portable classrooms fragment the organization of existing schools. It is usually impossible to locate portable facilities on the site in relationship to parking and bus loading, to library facilities, and to other major elements of the campus. Invariably, they are placed as an afterthought at the periphery of the campus and create a scattered building organization of the Master Plan.

4) Most portable manufacturers sell a classroom as an empty shell, and require the district to purchase such items as cabinet work, carpets, and specialized equipment as extras. Portable classrooms frequently do not have sinks or lavatories necessary for the elementary school programs. The equipment provided is not scaled to the student with lavatories and counter tops at the correct height, and there is seldom adequate storage for equipment.

5) In California, few portable classrooms are engineered for a specific climatic location. This would require that the building shell be analyzed to prevent heat loss or gain and that the heating and cooling plant be engineered for a particular temperature range. Manufacturers have attempted to market the same classroom with the same structural engineering in various regions in California from desert to mountain areas (heavy snow loads). Fortunately, the state laws under Title 21 prevent this and require that structural adequacy be proven for each submittal.

6) Portables are often placed on a site without provision for utilities such as gas, water, sewage, and storm drainage. The inclusion of utilities tends to make the portable classroom a permanent space and raises the cost level proportionate to permanent facilities. When the school connects the portable classroom to the campus with sidewalks or covered walkways, develops hardtop areas for play, and maintains landscaped areas, the portable classroom becomes a permanent classroom with compromises in space, flexibility, and environmental controls.

7) Aesthetically, portable classrooms have not found general acceptance by the lay public because they are recognized as sterile, monotonous, and unattractive buildings. There is no recognition of the elements which produce a good architectural solution. The materials used are generally light-weight fabricated materials and the result is often inappropriate to the climate, the region, the community, or the other buildings on the site.

CONCLUSION

The concern of the State for administering and controlling the leasing and purchasing of portable classrooms must include concern for the impact such portables have on education. If we are to impose regulations and procedures, we must first determine the extent that portable classrooms are jeopardizing such desirable goals as schools which have quality design, possess maximum educational utility, and represent true dollar value.

The Department of Education needs aid from districts to document their experiences with portable classrooms. Reports on the true and total cost of the portable including overhead, operating costs, and moving costs can be supplied by the Office of Local Assistance. Also, such groups and organizations as the California Taxpayers Association, Parent Teachers Association, American Institute of Architects, California Engineers Association, and general contractors and labor unions should be invited to voice their opinions. If evidence demonstrates that the use of portable facilities is retarding educational progress and creating fiscal difficulties for districts which have been encouraged to invest heavily in these units, then their use should be discouraged.

Decisions concerning the type and quality level of school buildings should recognize the fact that school officials have few, if any, chances to correct housing mistakes. School financing does not permit the luxury of second guessing. Once capital outlay funds or funds from operating budgets are spent for educational facilities, the district is committed to use them for long periods of time whether or not they meet the changing needs of education.

Part II — PERFORMANCE SPECIFICATIONS

Distribution

To manufacturers of portable school buildings, school district officials, and architects.

Purpose

To clarify for manufacturers the performance recommendations of the State Department of Education.

Authority

State Education Code, Chapter 2, Section 15302. "The Department of Education shall:

(b) Establish standards for school buildings.

(d) Approve plans and specifications submitted by governing boards of school districts and return any plans not conforming to the established standards without approval and with recommendations for changes."

Approval

All submittals reviewed by the Bureau of School Planning which fail to meet these performance specifications shall be returned to the manufacturer with written recommendations for changes. The governing board of the client school district shall be notified that such manufactured product does not comply with the established standards for schoolhousing of the State Department of Education.

PERFORMANCE SPECIFICATIONS

A. SPATIAL ADEQUACY

1. Instructional space shall allow a minimum of 30 sq. ft. of floor area per occupant. Special programs shall have area allowances as determined by program requirements and the Bureau of School Planning.

2. Ceiling heights shall be a minimum of 9'8". Beam clearance shall be a minimum of 8'10".

3. The minimum dimension shall be 28'0" for any instructional space 900 sq. ft. or over. The Bureau recommends large spans (over 50 ft.) composed of basic building units which permit varied space geometries.

B. VISUAL

1. Minimum total window area per classroom shall be 120 sq. ft. Sill height shall not exceed 32" on a major window wall. Windows not for viewing may have sill heights at door height.

2. The choice of luminaires and the pattern of installation shall be made with due consideration for the control of both direct and reflected brightness. The brightness of both exterior and interior light sources shall be controlled so as not to exceed 500 foot lamberts. Use of low transmission glass and wide overhangs is recommended. *

3. Light quantity shall be adequate to the task. The electrical system shall provide a minimum of 70 footcandles in general purpose instructional areas. Minimum reflectance values for interior surfaces shall be: 90% ceilings; 70% walls; and 20% chalkboards. *

4. Provision for room darkening shall be designed as an integral part of the fenestration by use of drapes, louvers, or similar devices.

C. ACOUSTICS

1. Exterior walls and roofs shall be designed to provide a minimum of 35 decibel reduction from exterior noise sources within the 50 to 500 cycle range.

2. Exterior walls and roof shall be designed to provide a minimum of 45 decibel reduction in locations of high external noise from aircraft or freeway traffic. Use of sound seals and double glazing is recommended.

3. Sound absorptive materials of suitable type and quantity shall be located to avoid echoes, sound focus, or excessive reverberation. Carpets are recommended where feasible.

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* "Guide for School and College Lighting." American Standards Association. "Engineering Handbook." Illuminating Engineering Society.

D. THERMAL

1. Adequate air exchange shall be provided in all instructional areas. A minimum of 20 c.f.m. per occupant. (40 c.f.m. per occupant recommended.)

2. Air distribution system shall assure air movement throughout the room. Location of supply and return grills shall be analyzed to avoid short circuiting. Unit ventilators with air supply and return in the same unit are not acceptable.

3. Gravity or mechanical exhaust systems shall be provided for areas such as toilet rooms, kitchens, science labs, etc.

4. Exterior weather stripping shall be required for all exterior doors.

5. The building shall be insulated to reduce heat loss or gain. Use of high reflectance roofing; gravity exhaust of attic spaces; and thermal insulation of all exterior walls, ceilings, and suspended floors is recommended.

6. Location and size of window vents shall permit cross-ventilation patterns. Minimum of 60 sq.ft. of operable sash per classroom is recommended. An exception to this requirement would be air-conditioned space.

7. Design of heating and/or cooling units shall be sized to maintain indoor air temperature control within the range of 68° to 80° F. regardless of the range of outside air temperatures.

8. Mechanical units shall be designed for simplicity of controls and operation. Thermostatic control shall be provided for each teaching station. Filters shall be located for easy replacement.

E. AESTHETICS

1. A sterile or over-industrialized building appearance should be avoided. Attention shall be given to defined proportions, broad sheltering overhangs, textured surface materials, etc.

2. Materials and colors shall be selected with discrimination and sensitivity. Minimum reflectance values shall comply with: B. VISUAL (3).

F. MAINTENANCE

1. Roofing shall have a minimum 20 year life expectancy.

2. Exterior surfaces shall be designed to require minimum painting or resurfacing.

3. Hardware and plumbing shall be commercial grade or better.

4. Window sash shall be of aluminum puttyless type.

5. Underground plumbing lines shall be protected from electrolysis and corrosion.

G. EQUIPMENT

1. The preliminary plan for each classroom shall clearly state the size and amount of furniture and equipment to be furnished as part of the contract. This shall include: the amount and type of storage elements, either fixed or movable; built-in coat racks; and chalkboards and shelving.

2. Interior walls of instructional spaces shall be designed as pin walls or tackboard surfaces.

3. When required by the program, each instructional area shall have an intercommunication system compatible with the existing system of the school.

4. Instructional areas serving grades K through 6 shall be provided with a lavatory with cold water faucet and bubbler.

H. CONSTRUCTION CRITERIA

1. Buildings shall be installed on a prepared site graded to a maximum slope of 4 inches in 30 feet. Floor elevation above the ground line shall not exceed 10 inches.

2. The contract shall include installation and connection of all required utilities such as electricity, gas, water, drain lines, etc.

3. Each instructional area shall have the equivalent of two duplex electrical outlets on each fixed interior wall. A waterproof duplex outlet shall be on exterior walls within 6 feet of every exit.

4. Buildings shall be protected by overhangs designed to: cut off direct sunlight from the interior; protect exterior surfaces from deterioration; and reduce heat gain through the walls. Minimum 6'0" overhangs are recommended.

I. REGULATION AND CODE REQUIREMENTS

1. Structural design shall conform to Title 21 of the California Administrative Code.

2. Plans and specifications shall be prepared and signed by licensed architects and/or structural engineers as required by the State of California.

3. A special review will be given to the plans for portable buildings requiring toilet areas and special utilities or equipment. Definitive plans and outline specifications shall be submitted by the manufacturer to the Bureau of School Planning. The Bureau will determine whether the proposed construction can adequately house the special program requirements.

Part III — EVALUATION QUESTIONNAIRE

This evaluation document for transportable school buildings has several purposes. First, it is keyed closely with the performance specifications. Together they give very specific information about what the Bureau of School Planning expects from the designer's drawing board - a better product than presently marketed with emphasis on components that will erect into large, flexible space shells with superior environmental conditioning. Such school buildings should not only permit but encourage the implementation of today's innovative education. Second, the school district as purchaser-owner, the manufacturer responsible for the production design, and the public official who has approval responsibility can readily rate a transportable building against the minimum design standards and immediately identify design deficiencies. Because this instrument is so easy to use, any potential client can determine whether or not a particular manufacturer's product is suitable for purchase.

The Bureau of School Planning readily admits that this document can be improved. If it is to be a useful tool, it must be revised periodically. We welcome suggestions from architects, manufacturers, and school officials, particularly in reference to deficiencies which may arise from its application in the field.

EVALUATION QUESTIONNAIRE

School: _____

District: _____

Address: _____

City: _____ County: _____

Evaluated by: _____ Title: _____

I. GENERAL INFORMATION

A. What is the present enrollment of this school? _____

B. What will be the enrollment when these portable units are added? _____

C. What grades will be served by these portable units? _____

D. Which of the following innovations are incorporated in the school program?

	YES	NO
1. Continuous growth programs replacing fixed grade levels.	____	____
2. Flexible scheduling.	____	____
3. Team teaching.	____	____
4. Large group, small group, and individual instruction.	____	____
5. Independent study patterns under limited supervision.	____	____
6. Extended use of library and instructional materials.	____	____
7. Subject matter and curriculum requiring special equipment.	____	____
8. Audio-visual techniques and electronic teaching machines.	____	____

II. BUILDING DESIGN

Does this school implement the following design concepts?	YES	NO
A. Spatial Adequacy		
1. Surfaces of interior walls designed as tackboard walls.	____	____
2. Chalkboards, pegboards, and shelving designed to be raised, lowered, or removed with ease.	____	____
3. Building designed for long spans (exceeding 50 feet).	____	____
4. Modular construction to permit relocation of interior walls.	____	____
5. Design coordination of lighting and air distribution systems with the structure.	____	____
6. Movable or demountable interior walls.	____	____
7. Use of movable cabinets or storage units.	____	____
B. Visual Environment		
1. Glass area sufficient to provide outdoor viewing of the ground plane at horizon from a seated position.	____	____
2. Windows screened from sky brightness, snow glare, or other high brightness sources by glare-reducing glass, roof overhangs, louvers, or other devices.	____	____
3. Electric lighting system designed to provide a minimum light level of 70 footcandles on pupil tasks.	____	____
4. Luminaire type and installation pattern selected to minimize both direct and reflected glare.	____	____
C. Sonic Environment		
1. Carpets.	____	____
2. Sound from the lighting and mechanical systems insulated from instructional areas.	____	____
3. Sound-absorbent materials used at ceiling and walls.	____	____

D. Thermal Environment

	YES	NO
1. Building designed to reduce heat loss or gain by use of thermal insulation, high reflectance roofing, gravity exhaust of attic spaces, etc.	_____	_____
2. Mechanical system designed to maintain a temperature range of 68° to 80° F. in instructional areas during all seasons.	_____	_____
3. Air conditioning.	_____	_____
4. Wide overhangs or other devices used to reduce maintenance and to protect glass areas and exterior walls from solar heat.	_____	_____
5. Forced air system designed to provide an air exchange of 20 c. f. m. per pupil.	_____	_____

E. Aesthetics

1. Exterior design appropriate to the community, climate and region.	_____	_____
2. Materials and colors selected with aesthetic sensitivity.	_____	_____
3. Building appearance over-industrialized.	_____	_____

III. EVALUATION RATING

	excellent	good	satisfactory	poor	not acceptable
A. Spatial adequacy	_____	_____	_____	_____	_____
B. Visual environment	_____	_____	_____	_____	_____
C. Thermal environment	_____	_____	_____	_____	_____
D. Acoustical environment	_____	_____	_____	_____	_____
E. Aesthetic appearance	_____	_____	_____	_____	_____

Part IV — PROBLEMS OF COMPLIANCE WITH TITLE 21

Problems arise when manufacturers of portable school buildings attempt to comply with Title 21 of the California Administrative Code and with Sections 15352, 15409, and 15451 to 15465 of the Education Code. Portable buildings are pre-fabricated from building units and assembled in various combinations. The procedure of manufacture is entirely different from that of constructing custom-designed school buildings; yet, the legal requirements for processing plans and obtaining approval for structural design adequacy are the same. Issues of conflict resulting from existing legislation include:

1. When districts lease portable buildings for a period of less than three years, they need not comply with the structural safety requirements of Title 21 because these buildings are considered to be temporary; however, if occupancy exceeds three years, the structures must then comply because they are considered permanent. Many of these buildings do not meet minimum levels of safety.

2. The process of manufacture requires that inspections be accomplished at the fabrication center. Under such conditions, it is virtually impossible for the district architect or agent of the district to maintain adequate inspection. Generally, the architect's only familiarity with the final building product is during that time when the component parts are erected on prepared footings at the building site.

In response to these issues and problems of compliance by the manufacturer with Title 21, Andrew R. Lolli, Director of General Services, has sought the opinion of Thomas C. Lynch, Attorney General.

OPINION
of
Thomas C. Lynch, Attorney General
William M. Goode, Deputy Attorney General

QUESTION 1 May the governing board of a school district appoint a manufacturer, contractor, or builder of public school buildings as its agent for the submission of plans and payment of fees as required by Section 15454 of the Education Code?

OPINION: Conflict of interest considerations prevent a school district from appointing as agent for submitting plans and payment of fees as required by Section 15454 of the Education Code any person who has any direct or indirect interest in the contract that would result if the plans are approved.

QUESTION 2 May a school district utilize the services of an architect or structural engineer, with or without compensation, to perform the functions prescribed by Section 15459 of the Education Code when such person is in the employ of, associated with, or compensated by the manufacturer or builder of school buildings?

OPINION: Conflict of interest considerations prevent a school district from utilizing the services of an architect or structural engineer to perform the functions prescribed by Section 15459 of the Education Code when such person has any direct or indirect relationship with any entity which is or may be a contracting party or beneficiary of a contract for the construction of portable school buildings.

QUESTION 3 May a school district architect or structural engineer adopt, subject to such modifications as he deems necessary, plans for school buildings prepared by another person?

OPINION: A school district architect or structural engineer must submit his own plans; however, he may adopt or modify plans prepared by a manufacturer or anyone else provided that he signifies that the plans as adopted are his and accepts full responsibility therefor.

QUESTION 4 May a school district discharge its duty to provide for inspections under Section 15463 of the Education Code, by reimbursing a manufacturer or builder who furnishes and pays for such services, or by using an inspector who is compensated by a commercial laboratory which is employed by the contractor or builder?

OPINION: The responsibility imposed on a school district by Section 15463 of the Education Code to provide for adequate inspection of school building construction is not satisfied by reimbursing the manufacturer or builder of the structures to perform such inspections. The services of a commercial laboratory may be used to perform inspection functions only when the performance of such laboratory is truly independent with respect to the particular project.

The following information is extracted from the ANALYSIS prepared by the Attorney General in the formulation of his OPINIONS:

1) Contractor or manufacturer as agent of school district.

When the Field Act (Title 21 of the California Administrative Code) was enacted, the Legislature had no reason to anticipate current widespread use of portable school buildings, and its procedures are aimed at permanent conventional structures. Problems that have been encountered in applying the Field Act to portable school buildings underscore the unsuitability of this statute for such structures. Nevertheless, Sections 15352, 15409, and 15451 to 15465 of the Education Code make mandatory the application of the Field Act to portable school buildings.

We have serious doubts that the manufacturer, contractor, or builder of portable school buildings can faithfully represent the school district on matters dealing with the acquisition of such portable units even when he would be performing merely ministerial functions as an agent of the school district. The basic financial interest such person would have in the contract that would result if the plans are approved creates a potential conflict of interest that threatens the public interests which the Field Act requires be scrupulously safeguarded.

2) Utilization of services of architect or structural engineer with interest in potential contracting party.

Section 15406 of the Education Code provides: "The district shall furnish its own architect or structural engineer, or both, for necessary structural engineering and supervision of construction." The intent of this Section is to require a school district to employ an architect or structural engineer who will be directly responsible to the district and who will have no interests adverse to the district. An architect who is in the employ of, or associated with, a manufacturer, contractor, or builder of school buildings, is subject to a conflict of interest which would prevent him from serving as the school district's "own" in terms of faithfully discharging his responsibilities to the district under Section 15459 of the Education Code independent of adverse interests.

3) Adoption of plans for school buildings prepared by another person.

Portable school buildings are designed for production line manufacture. This requires that the manufacturer prepare standardized plans for the construction of the building units or modules. The school district architect or engineer is then faced with the situation that some or all of the necessary plans have already been prepared by the manufacturer, even though Sections 15406 and 15459 of the Education Code require that preparation of plans for school buildings be accomplished by the school district's own architect or structural engineer.

Because the plans for school buildings must be prepared by the district's architect or structural engineer, that person must accept full responsibility for the plans that are submitted to the Department of General Services. He may adopt the plans presented by the manufacturer as his own or he may make whatever changes he considers necessary. The fact that the actual preparation of the plans may have been done by the manufacturer is immaterial when the district's architect or structural engineer adopts them as his own and thereby accepts responsibility for them.

The fact that a manufacturer may present, or be willing to present, completed plans, does not relieve the school district of its statutory responsibility to have such plans "prepared" by its own architect or structural engineer.

4) Inspections.

Section 15463 specifies that the school district or political subdivision within the jurisdiction of which any school building is constructed shall provide for and require competent inspection during construction. The inspector is responsible to the governing board, and must be satisfactory to both the architect or structural engineer and to the Office of Architecture and Construction.

Here again we are faced with a conflict of interest situation. The primary function of an inspector is to ensure that the interests of the school board and/or the public are adequately protected. An inspector for the school board may not have an interest in the business of the manufacturer or contractor whose work he is required to inspect. This bars the compensation of such an inspector either directly or indirectly by the manufacturer or contractor. The division of Architecture should refuse to approve the designation of an inspector who was compensated by or associated with the manufacturer.

PART V - PROCEDURE FOR ACQUIRING PORTABLE BUILDINGS

Educational planning is the process of collecting essential information and evaluating this information to make decisions pertinent to achieving educational goals. This process has special value in making the critical decisions necessary to programming and acquiring school facilities. This process is as valid in determining the requirements for portable housing as for custom-designed permanent housing. The planner must still decide what will best house the educational programs of today and tomorrow.

PROCEDURE FOR ACQUIRING PORTABLE BUILDINGS

The Bureau of School Planning recommends the following procedure for the acquisition of portable school housing that will enable districts to comply with the Education Code.

Districts shall:

(1) Inform the Bureau of School Planning of their intention to acquire portable school housing before any commitment is made to a manufacturer.

(2) Submit to the Bureau the completed "Questionnaire for Acquiring Portable Classrooms" in duplicate.

(3) Prepare and submit in duplicate to the Bureau on 8 1/2" x 11" paper the site plan to be used for portable units showing their location and relationship to other buildings and facilities.

(4) Comply with requirements of the Office of Architecture and Construction.

When this material has been received by the Bureau of School Planning, a copy will be sent to the County Superintendent of Schools for his review. It will be noted that no signature of approval is required by the Bureau, nor will it be given.

In any instance, when it becomes evident that (a) the proposed portable facility is inappropriate for its intended educational use; (b) the manufactured product fails to comply, in so far as possible, with the performance specifications established by the Department of Education (see Part II of this document); or (c) the proposed acquisition is in violation of legal requirements of the State of California, a field representative of the Bureau of School Planning will review with the district their proposal for the acquisition of portable facilities and make appropriate recommendations. If it is the intent of the district to acquire these facilities without Bureau sanction, then the Department of Education shall send the governing board a statement giving reasons why the plans do not conform to established standards or legal requirements and give written recommendation for changes.

QUESTIONNAIRE FOR THE ACQUISITION OF PORTABLE SCHOOL FACILITIES

School: _____

District: _____

Address: _____

City: _____ County: _____

Legal Agent for the District: _____

1. What kind of programs or activities will be housed in these facilities? _____
   _____

2. How many portable units are being acquired for this site now? _____
   When maximum enrollment is reached, how many pupils will be housed in permanent facilities? _____ pupils In portable units? _____ pupils

3. Does the agreement with the manufacturer include: Air conditioning? _____
   Carpets? _____ Chalkboards? _____ Fixed cabinetwork? _____ Movable cabinetwork? _____ Sinks and drinking fountains? _____

4. Is the district providing: Exterior night lighting? _____ Landscaping? _____
   Lawn sprinklers? _____ Sewers? _____ Sidewalks to these portable buildings? _____
   Storm drainage? _____ Water supply? _____

5. Will these units be located adjacent to: Playfields? _____ Toilet facilities? _____

6. What are the interior dimensions of each instructional unit? _____
   How many pupils will be assigned to each instructional unit? _____

7. What is the estimated cost of: Basic instructional units (total)? _____
   Furniture and equipment? _____ Site preparation and utilities? _____

8. Will these buildings be leased or purchased? _____
   What funds will be used? _____

9. Have these facilities been evaluated? (See Part III of this document.) _____
   What was the rating? (a) Spatial adequacy _____ (b) Visual _____
   (c) Thermal _____ (d) Acoustical _____ (e) Aesthetic _____

10. Why are you acquiring these portable buildings rather than custom-designed permanent facilities? _____

EXCERPTS FROM THE EDUCATION CODE

The powers and duties of the Bureau of School Planning that relate to the acquisition of portable school housing are stated in the following sections of the Education Code under Chapter 2 - Construction of School Buildings.

Powers Concerning Buildings and Building Sites

15302. The Department of Education shall:

(c) Review all plans and specifications for buildings in every district required to submit plans and specifications therefor to it for approval . . .
The department shall charge governing boards of school districts for the review of plans and specifications, a fee of one-twentieth of 1 percent of the estimated cost determined by the Division of Architecture. The minimum fee in any case shall be ten dollars ($10).

Use of Temporary Quarters or Portable Buildings

15352. When the school enrollment of any school causes overcrowded schoolrooms, the governing board of the school district may make arrangements for the location of the school in temporary quarters or in portable buildings.

These quarters or portable buildings may be procured for a consideration, or at a rental, or by the construction of a temporary or portable buildings on school property or on land leased therefor. The leasing of any portable buildings shall not be made for a longer period than seven years and may include a provision for the purchase of such buildings on a depreciated basis at the end of such seven-year period or prior thereto.

Any building leased for a total time in excess of three years or under a purchase agreement shall be deemed the construction or alteration of a school building as those terms are defined in Sections 15451 to 15465, inclusive, and all the provisions of those sections and of 15409 shall apply thereto.

Required Approval of Plans by Department of General Services

15404. The plans and specifications for any school building as defined in Section 15452, together with estimates of cost, shall be submitted by the board to the Department of General Services for approval.

District's Provision of Architect or Structural Engineer

15406. The district shall furnish its own architect or structural engineer, or both, for necessary structural engineering and supervision of construction.

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